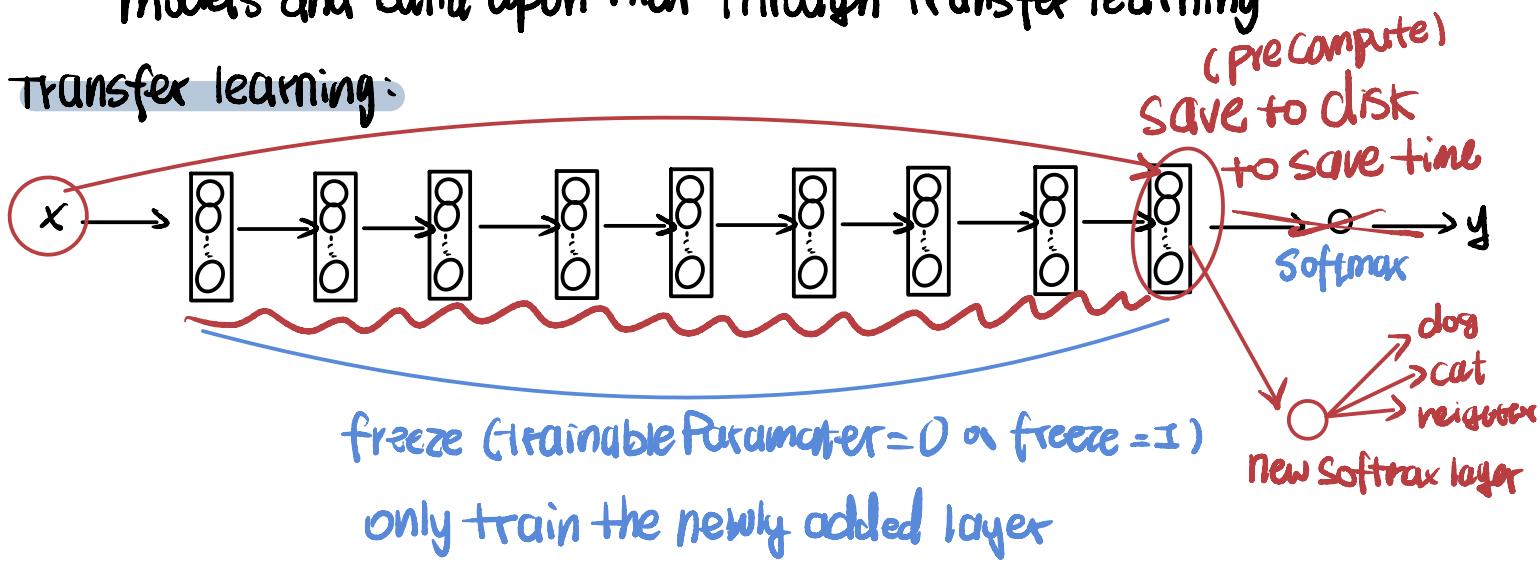


Advice for Using ConvNets

Using open-source implementation:

It's usually better (faster) to start off from some pre-trained open source models and build upon that through transfer learning

Transfer learning:



freeze all pre-trained layers if you have a small dataset,

freeze only first couple layers otherwise.

If you really have a big dataset, you can only use the pre-trained model as initialization and train the whole model with new data.

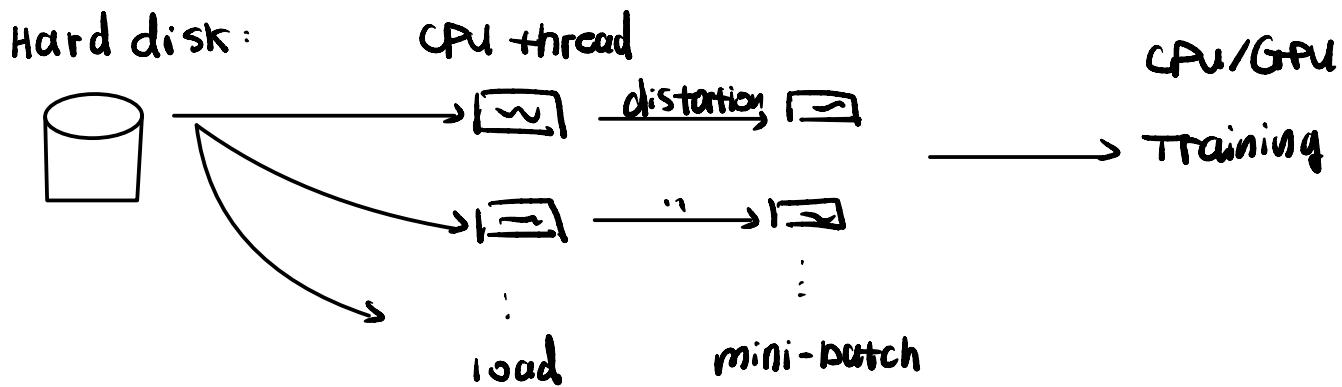
Data Augmentation : produce more training data.

Common augmentation method :

- Mirroring
- Random cropping
- Color shifting e.g. $+20, -20, +20 \dots$
- Rotation
- shearing
- local warping

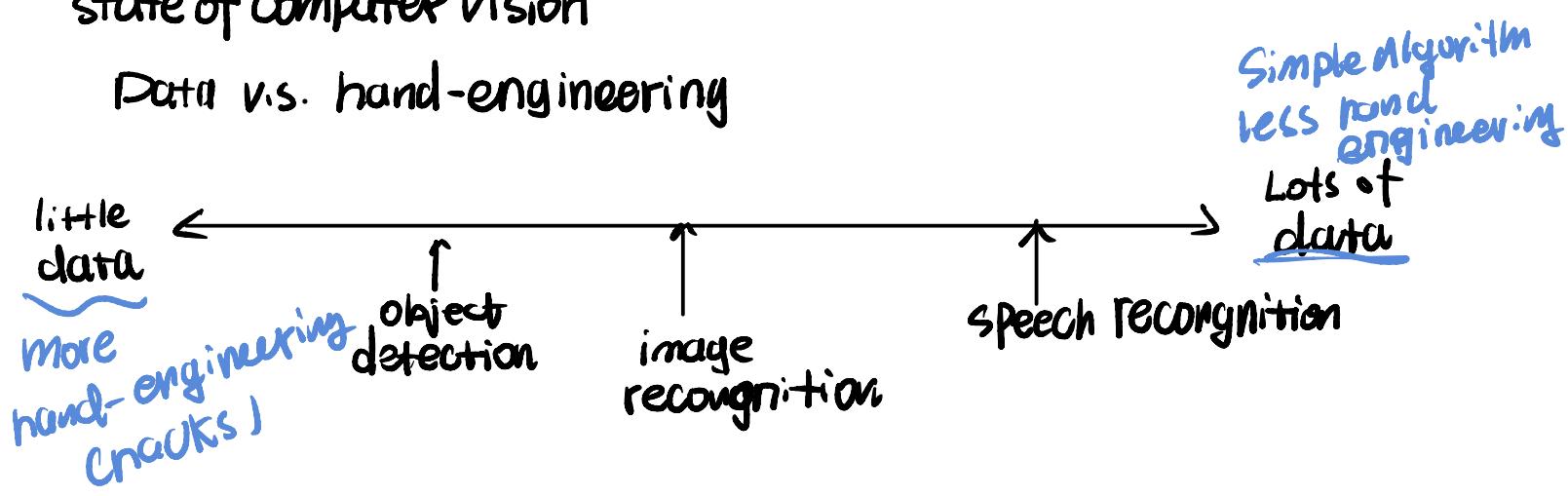
R G B

Implementing distortions during training



State of Computer Vision

Data v.s. hand-engineering



Two source of knowledge :

- Label data
- Hand engineering features ./ network architecture